

L2 ANSWER 1 OF 1 WPIX COPYRIGHT 2003 THOMSON DERWENT on STN  
ACCESSION NUMBER: 1981-35067D [20] WPIX  
TITLE: Epoxy resin compsn. free from skin formation during  
storage - obtd. by from maleic anhydride, nitrogen contg.  
epoxy resins, has good mechanical properties.  
DERWENT CLASS: A21  
PATENT ASSIGNEE(S): (MITN) MITSUBISHI GAS CHEM IND CO LTD  
COUNTRY COUNT: 1  
PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN	IPC
JP--56030458	A	19810327	(198120)	*			<--

PRIORITY APPLN. INFO: 1979JP-0106379 19790821  
INT. PATENT CLASSIF.: C08K-005-09; C08L-063-00  
BASIC ABSTRACT:

JP 56030458 A UPAB: 19930915

Compsn. is free from skin-formation on the surface during storage is  
prepd. by adding (1) maleic anhydride in an amt. of 3-15 pts. to 100 pts.  
of epoxy resin of (2) to (2). (2) is the resin mixt. prepd. by blending  
(a) acid anhydride with (b) N-contg. epoxy resin or N-contg. epoxy  
resin-contg. other resins, and heating at 50-70 deg.C while stirring, for  
10-40 minutes.

N-contg. epoxy resin is e.g. polyglycidylamine cpd. prepd. by  
allowing amine (e.g. aniline, 4,4'-diaminodiphenylmethane,  
tolylenediamine) to react with epihalohydrine or beta-  
methylepihalohydrine, and halogenated hydrogen-extracting from the  
reaction prod. Pref. the mixt. of N-contg. epoxy resin and other epoxy  
resin (e.g. bisphenol A epoxy resin, alicyclic epoxy resin, novolak type  
epoxy resin) contains above 50 wt.% of N-contg. epoxy resin.

The compsn., when heated and cured at 120-160 deg.C for 30-120  
minutes and a 150-200 deg.C for 4-10 hrs. forms a prod. with excellent  
mechanical, electrical and thermal properties.

FILE SEGMENT: CPI  
FIELD AVAILABILITY: AB  
MANUAL CODES: CPI: A05-A01B; A05-A04; A08-D02; A09-A01A; A09-A03;  
A09-A05

PARTIAL TRANSLATION OF JAPANESE UNEXAMINED PATENT PUBLICATION  
(KOKAI) NO. 56-30458

Title of the Invention: Epoxy Resin Composition

Publication Date: March 27, 1981

Patent Application No.: 54-106379

Filing Date: August 21, 1979

Applicant: Mitsubishi Gas Kagaku K.K.

Priority claimed: None

SCOPE OF CLAIM FOR PATENT

A curable epoxy resin composition in which skinning on the surface of the composition during storage is prevented, characterized in that 3 to 15 parts based on 100 parts of total epoxy resin of maleic anhydride is added to a resin mixture obtained by blending a nitrogen-containing epoxy resin, or other epoxy resin containing a nitrogen-containing epoxy resin with an anhydride type curing agent, the resulting mixture is subjected to heating treatment at temperature of 50 to 70°C for 10 to 40 minutes with stirring.

DETAILED DESCRIPTION OF THE INVENTION (EXCERPT)

The present invention relates to a curable epoxy resin composition in which skinning on the surface of the composition during storage is prevented. It relates to a curable epoxy resin composition which provide a cured product having a superior mechanical, electrical and thermal properties by curing the composition under a certain condition.

Conventionally, maleic anhydride as one of curing agents for an epoxy resin is used with an anhydride curing agent having a high melting temperature to reduce a melting point

of the anhydride curing agent. In this case, an amount of maleic anhydride used is 40 to 50 parts per 100 parts of the resin.

The use of maleic anhydride in the present invention is different from the conventional use.

In the present invention, maleic anhydride is used in amount of 3 to 15 parts based on 100 parts of total epoxy resin in a resin mixture obtained by blending a nitrogen-containing epoxy resin, or other epoxy resin containing a nitrogen-containing epoxy resin with an anhydride type curing agent.

Further, after addition of maleic anhydride, the resulting mixture is heated at temperature of 50 to 70°C for 10 to 40 minutes with stirring. This is a temperature and time to sufficiently disperse maleic anhydride into the epoxy resin mixture containing the curing agent.

A catalyst generally used when curing with an anhydride, for example, a tertiary amine such as benzyldimethylamine, tris(dimethylamino)methylphenol, an imidazole, such as 2-ethyl-4-methylimidazole, boron trifluoride-amine complex, metal soap such as zinc octoate, cobalt naphthenate, extra-coordinated silicate salt, and a filler, a diluent, a softening agent and modifier etc. are optionally added with no detrimental effect on the properties of the cured resin.